# The Tail Wagging the Dog? The Impact of Removing Infrequently Used Journal Titles on the Stability of the Consortial Core Journals List

**Yaşar Tonta & Yurdagül Ünal**
Department of Information Management
Hacettepe University
Ankara, Turkey
{tonta, yurdagul}@hacettepe.edu.tr

# Outline

- Background
- Research setting and data sources
- Research questions
- Method
- Findings
- Conclusion

# Background

- Consortial licensing models
  - FTE-based
  - Usage-based
  - Others
- “Orderly retreat”
- MESUR studies

# Research Setting and Data Sources

- 115 Turkish universities, 2.5M students, 80K faculty
- The Consortium of Anatolian University Libraries (ANKOS) (www.ankos.gen.tr )
- The National Academic License of Electronic Resources (EKUAL)
- More than 27M articles downloaded from ScienceDirect (2001-2007), SpringerLink (2004-2007) and Wiley InterScience (2003-2006) e-journal databases by ANKOS members were analyzed

# Research Questions

- Does incrementally removing the infrequently used journal titles from the tail jeopardize the stability of the core journals list of a consortium of academic libraries?
- How does this affect the consortium members' core journal lists?
- Would consortium members be disenfranchised by removing rarely used titles from the tail?

# Method

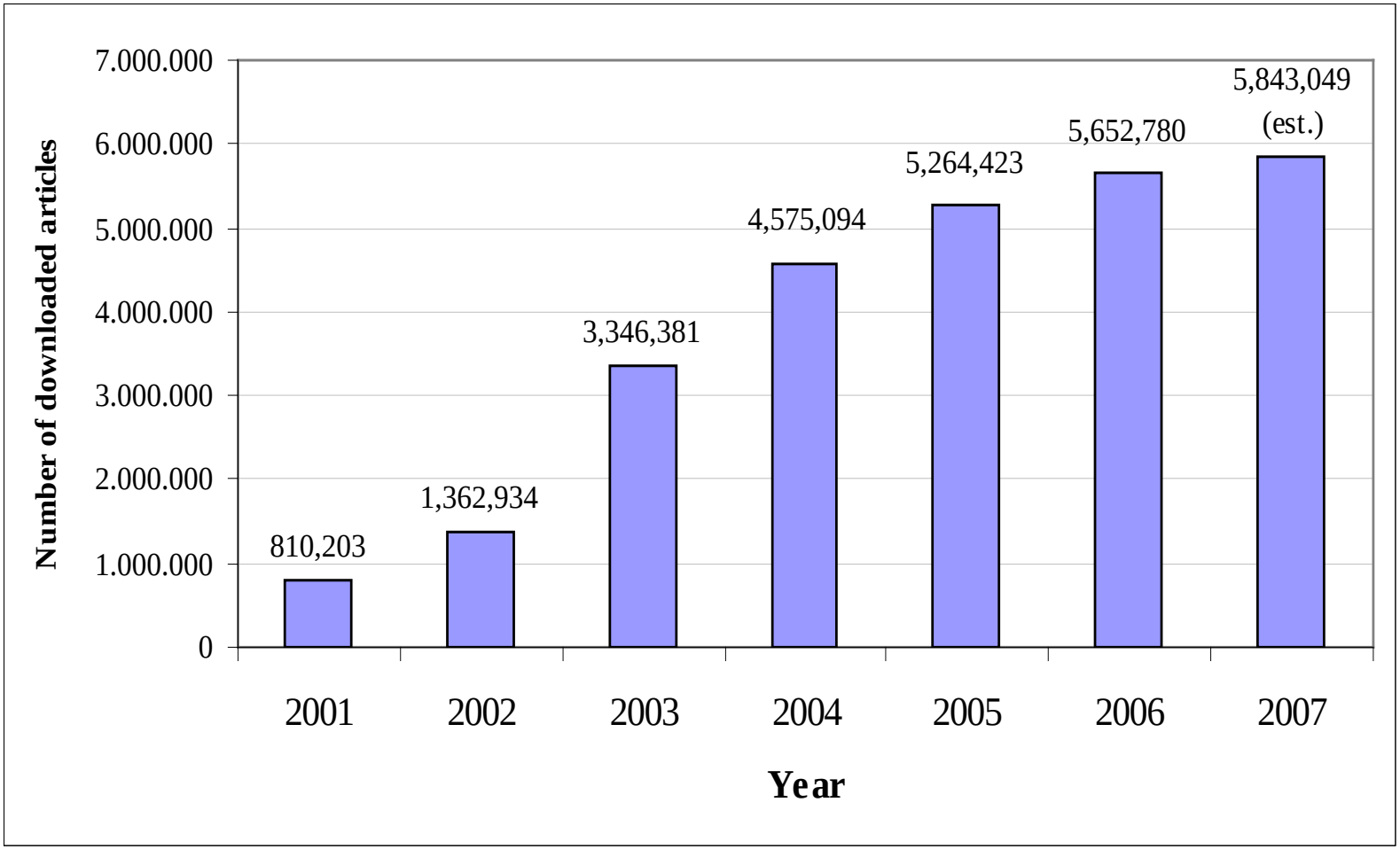
- Distributions of downloads to journal titles for ScienceDirect, Springer Link and Wiley Interscience e-journal packages using Bradford curves
- Core journal lists identified for ANKOS consortium and ANKOS member libraries
- 5%, 10%, 20% and 30% of journal titles removed from the tails
- Checked to see if ANKOS core journal lists as well as those of member libraries were disenfranchised

# Findings

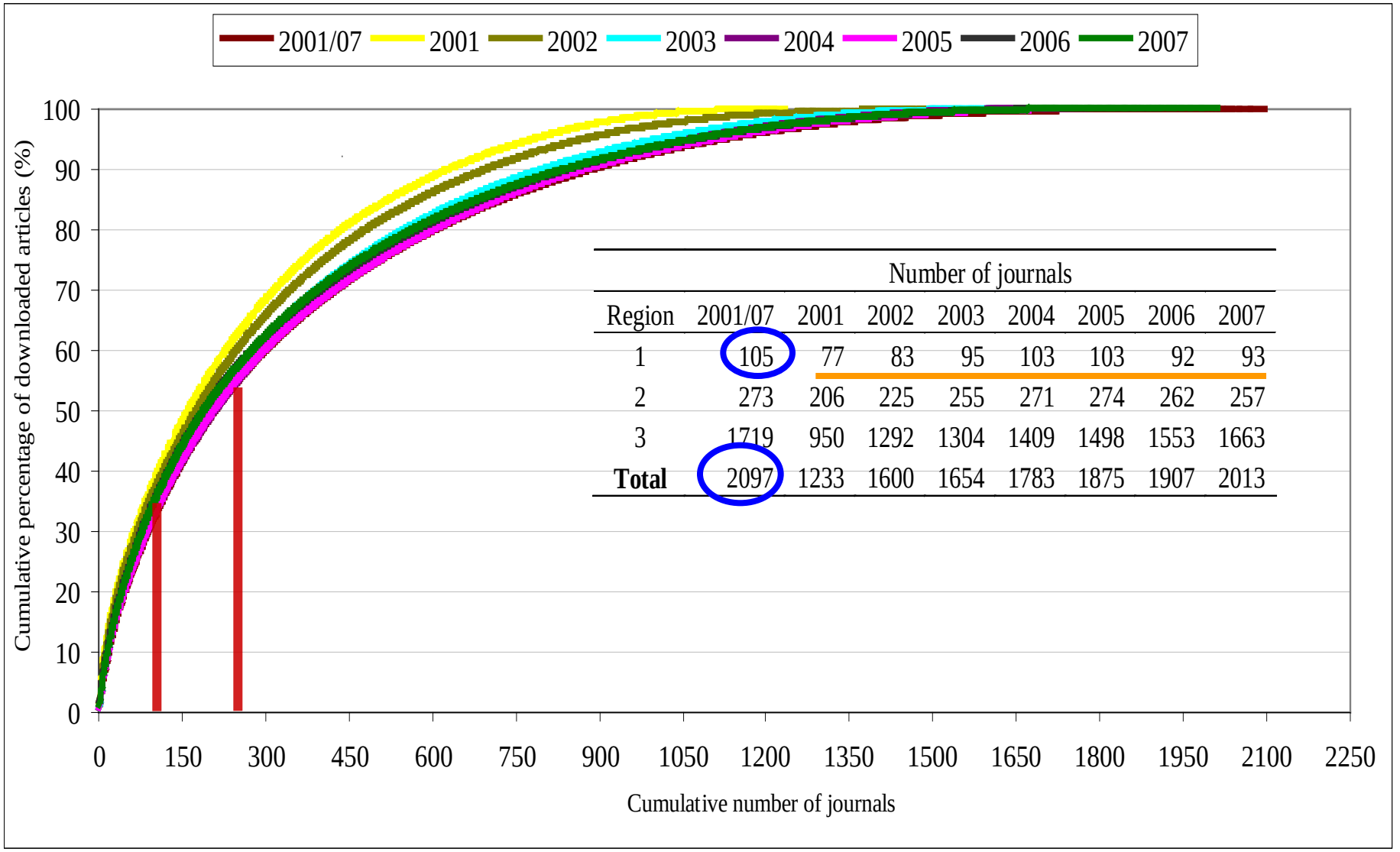
# Full-text article downloads from e-journal databases

| Electronic journal database | Downloads by ANKOS consortium users | | |
|---|---|---|---|
| | # of journals used | N | % |
| ScienceDirect | 2,097 | 25,145,293 | 90.1 |
| SpringerLink | 1,779 | 1,715,164 | 6.1 |
| Wiley InterScience | 470 | 1,055,741 | 3.8 |
| **Total** | **4,346** | **27,916,198** | **100.0** |

# Full-text downloads from ScienceDirect e-journals (2001-2007)

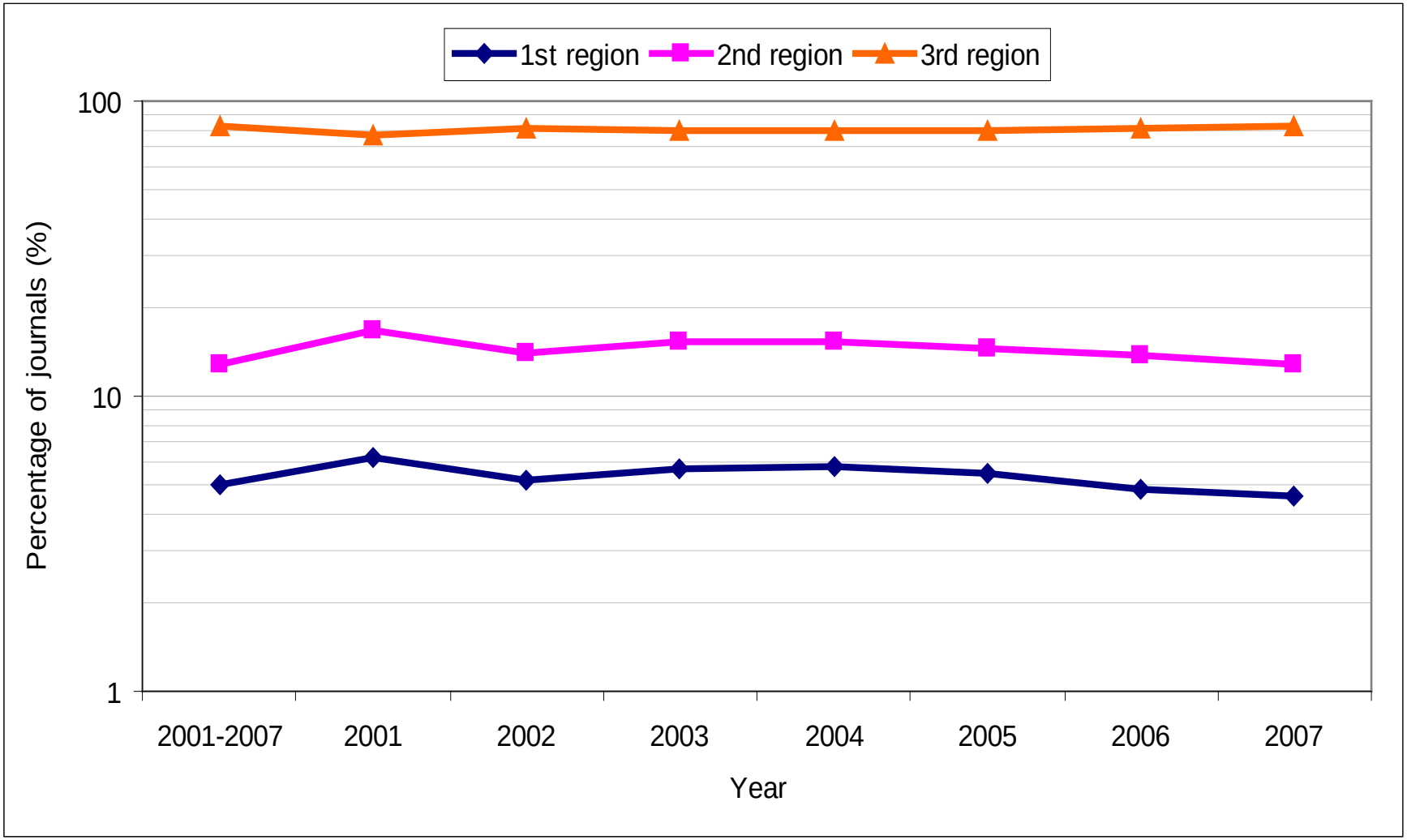


# Bradford curves for use of ScienceDirect journals




| | Number of journals | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Region | 2001/07 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| 1 | 105 | 77 | 83 | 95 | 103 | 103 | 92 | 93 |
| 2 | 273 | 206 | 225 | 255 | 271 | 274 | 262 | 257 |
| 3 | 1719 | 950 | 1292 | 1304 | 1409 | 1498 | 1553 | 1663 |
| **Total** | 2097 | 1233 | 1600 | 1654 | 1783 | 1875 | 1907 | 2013 |

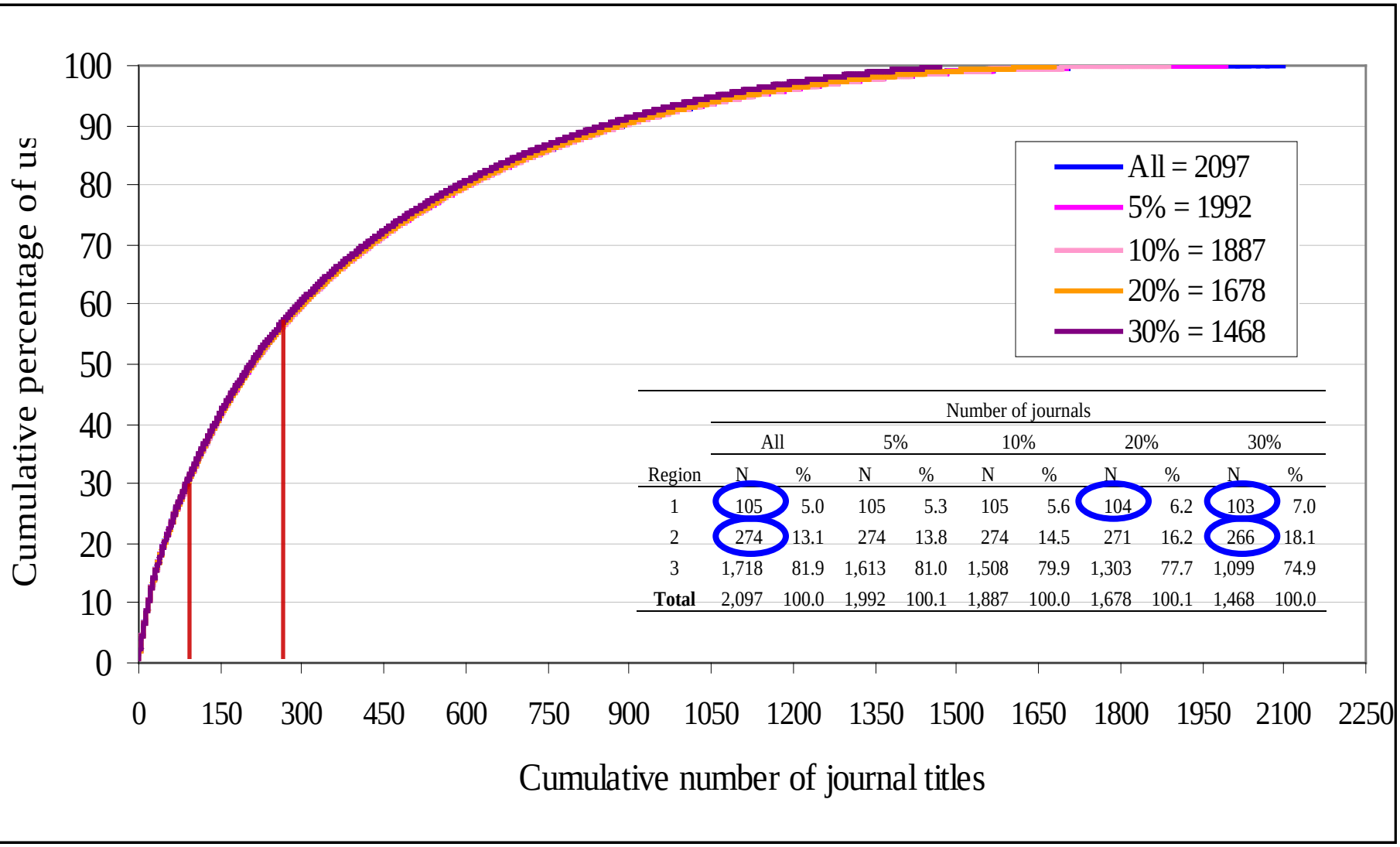
# Yearly distributions of ScienceDirect journal titles by region



# Common core ScienceDirect journals

| Journal name | Ranks by years | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2001/07 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Food Chemistry | 1 | 9 | 9 | 12 | 1 | 1 | 2 | 1 |
| European Journal of Operational Research | 2 | 5 | 5 | 4 | 2 | 2 | 3 | 2 |
| Lancet, The | 3 | 29 | 11 | 1 | 3 | 3 | 5 | 6 |
| Journal of Materials Processing Technology | 4 | 6 | 2 | 2 | 4 | 6 | 7 | 3 |
| Journal of Food Engineering | 5 | 26 | 24 | 21 | 6 | 8 | 4 | 5 |
| Tetrahedron Letters | 6 | 19 | 13 | 15 | 12 | 4 | 10 | 15 |
| Journal of Chromatography A | 7 | 13 | 10 | 11 | 10 | 11 | 9 | 14 |
| Analytica Chimica Acta | 10 | 7 | 12 | 6 | 18 | 17 | 12 | 13 |
| Water Research | 11 | 3 | 4 | 10 | 15 | 16 | 22 | 30 |
| Cement and Concrete Research | 12 | 27 | 6 | 5 | 19 | 5 | 30 | 52 |
| Materials Science and Engineering A | 13 | 15 | 23 | 19 | 16 | 20 | 17 | 8 |
| Tetrahedron | 15 | 32 | 27 | 23 | 25 | 7 | 14 | 17 |
| Polymer | 16 | 18 | 22 | 16 | 23 | 19 | 15 | 11 |
| Biomaterials | 17 | 49 | 19 | 20 | 14 | 15 | 20 | 26 |
| Surface and Coatings Technology | 18 | 24 | 16 | 36 | 26 | 18 | 18 | 10 |
| Bioresource Technology | 20 | 36 | 28 | 39 | 28 | 21 | 16 | 7 |

# Removing 30% from the tail of ScienceDirect journal titles makes almost no effect on heavily or intermediately used titles

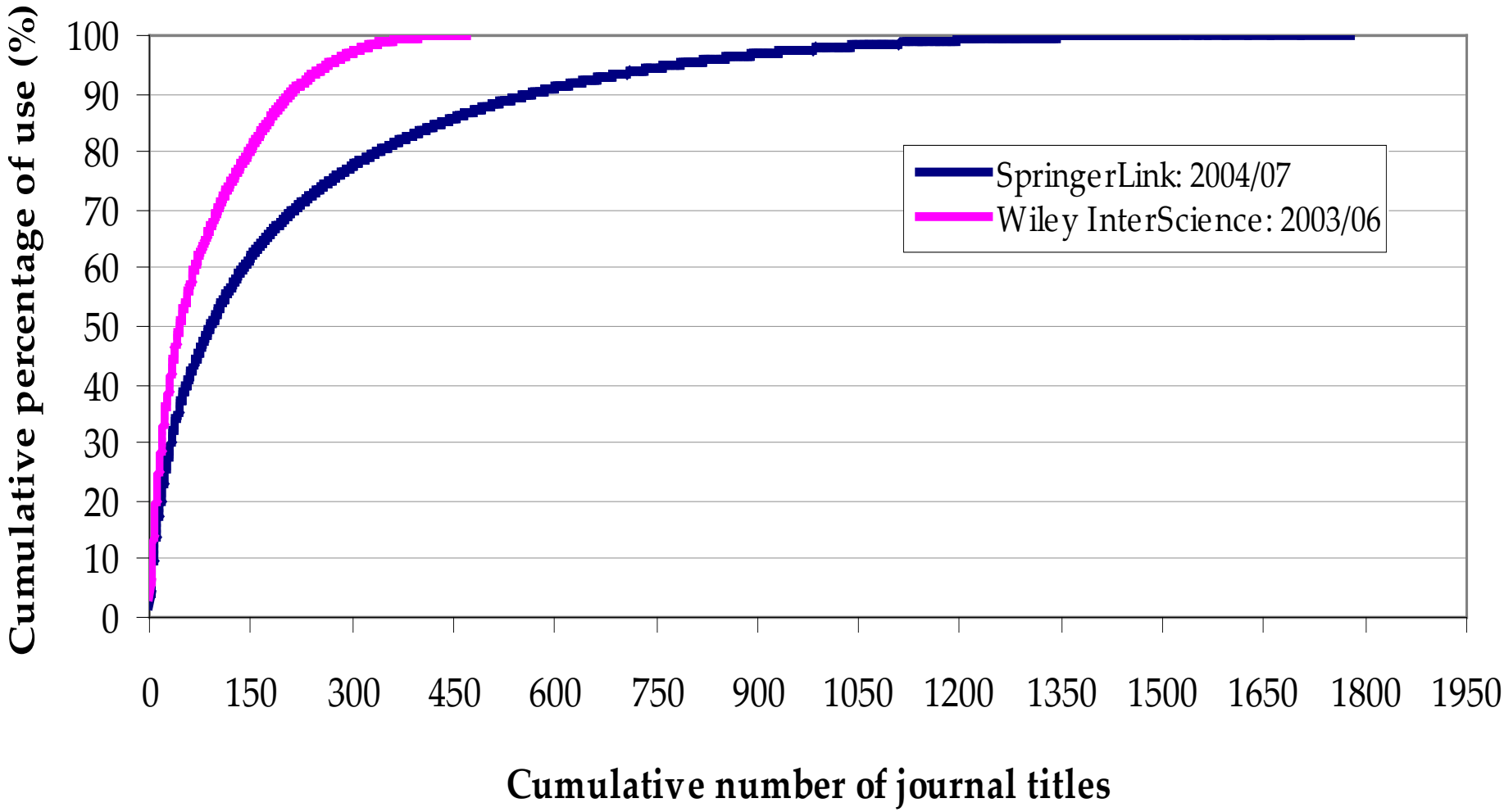



| | Number of journals | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | All | | 5% | | 10% | | 20% | | 30% | |
| Region | N | % | N | % | N | % | N | % | N | % |
| 1 | 105 | 5.0 | 105 | 5.3 | 105 | 5.6 | 104 | 6.2 | 103 | 7.0 |
| 2 | 274 | 13.1 | 274 | 13.8 | 274 | 14.5 | 271 | 16.2 | 266 | 18.1 |
| 3 | 1,718 | 81.9 | 1,613 | 81.0 | 1,508 | 79.9 | 1,303 | 77.7 | 1,099 | 74.9 |
| **Total** | 2,097 | 100.0 | 1,992 | 100.1 | 1,887 | 100.0 | 1,678 | 100.1 | 1,468 | 100.0 |

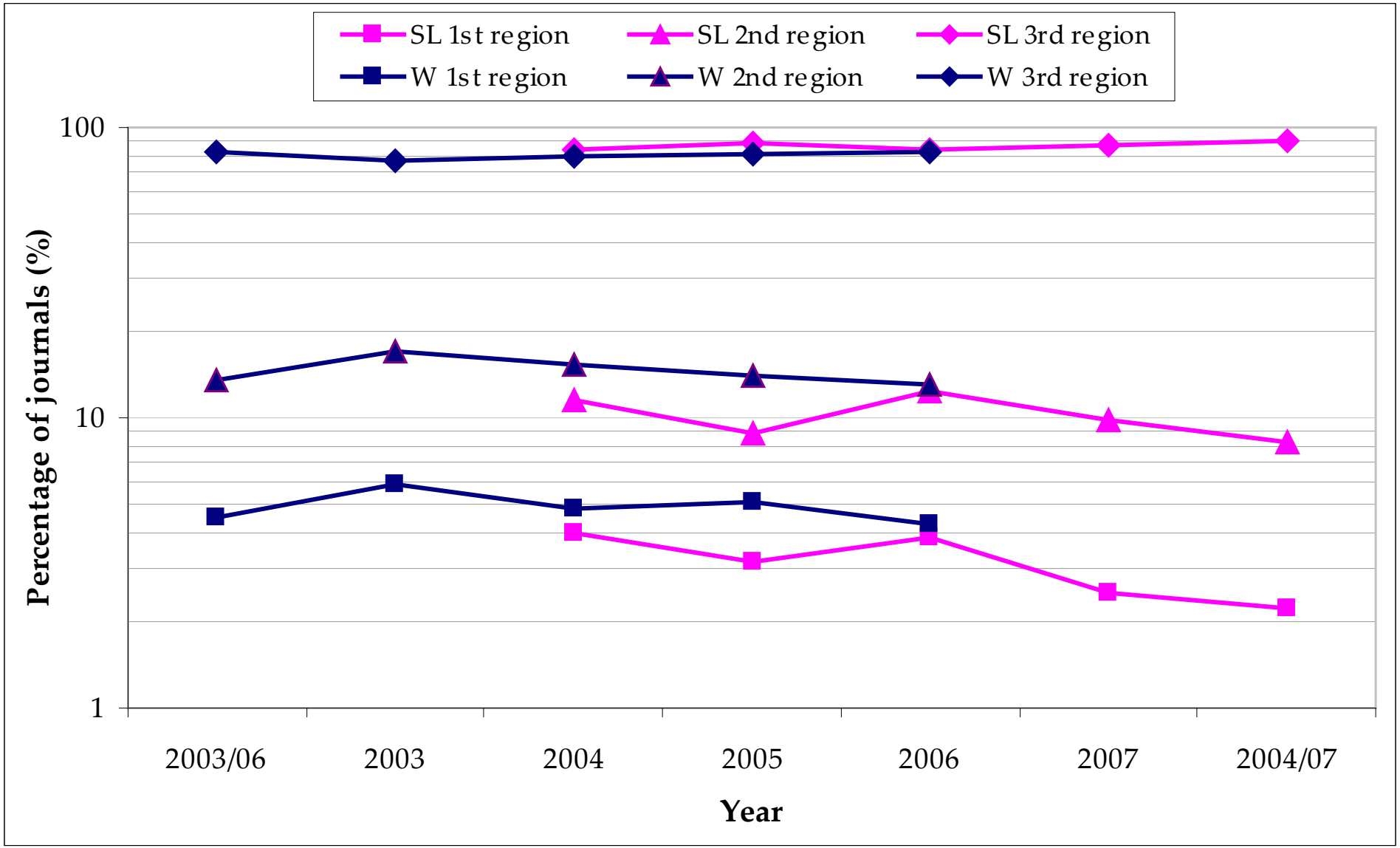
# Top 30 ScienceDirect core journals

1. Food Chemistry
2. European J. of Operational Research
3. Lancet, The
4. J. of Materials Processing Technology
5. Journal of Food Engineering
6. Tetrahedron Letters
7. Journal of Chromatography A
8. J.of the Americ.Coll. of Cardiology
9. Clinical Biochemistry
10. Analytica Chimica Acta
11. Water Research
12. Cement & Concrete Research
13. Materials Science & Engineering A
14. Applied Math. & Computation
15. Tetrahedron
16. Polymer
17. Biomaterials
18. Surface & Coatings Technology
19. Fertility & Sterility
20. Bioresource Technology
21. Annals of Thoracic Surgery, The
22. American J. of Cardiology, The
23. Journal of Hazardous Materials
24. Chemosphere
25. Energy Conversion & Management
26. Aquaculture
27. Urology
28. International Journal of Production Economics
29. Thin Solid Films
30. Brain Research

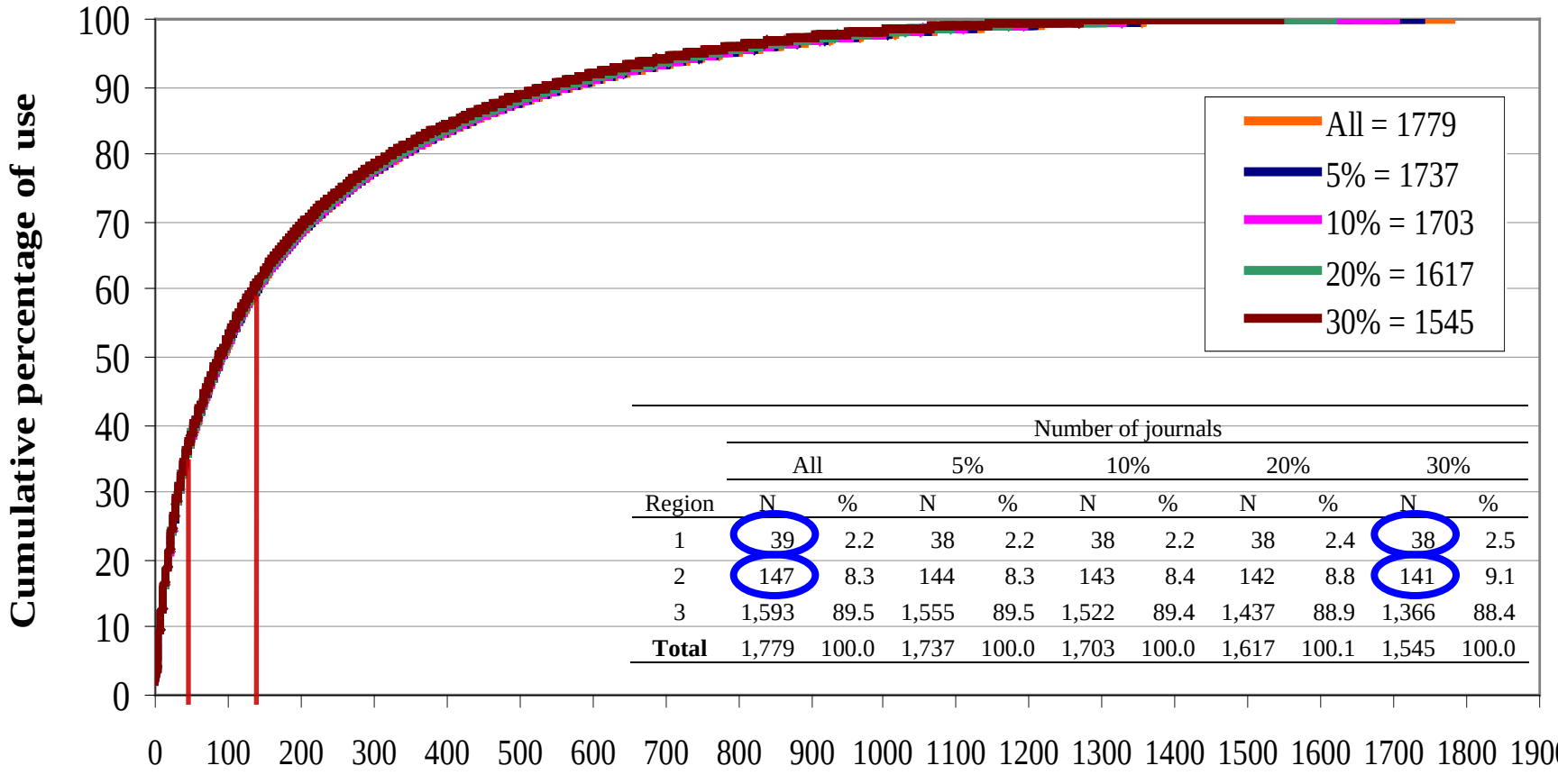
# Bradford curves for use of Springer Link and Wiley Interscience journals



# Yearly distributions of SpringerLink and Wiley InterScience journal titles by region



# Removing 30% from the tail of Springer Link journal titles makes almost no effect on heavily or intermediately used titles




| | Number of journals | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | All | | 5% | | 10% | | 20% | | 30% | |
| Region | N | % | N | % | N | % | N | % | N | % |
| 1 | 39 | 2.2 | 38 | 2.2 | 38 | 2.2 | 38 | 2.4 | 38 | 2.5 |
| 2 | 147 | 8.3 | 144 | 8.3 | 143 | 8.4 | 142 | 8.8 | 141 | 9.1 |
| 3 | 1,593 | 89.5 | 1,555 | 89.5 | 1,522 | 89.4 | 1,437 | 88.9 | 1,366 | 88.4 |
| **Total** | 1,779 | 100.0 | 1,737 | 100.0 | 1,703 | 100.0 | 1,617 | 100.1 | 1,545 | 100.0 |

# Top 39 Springer Link core journals

1. Journal of Intelligent Manufacturing
2. European Radiology
3. Pediatric Nephrology
4. World Journal of Surgery
5. Pediatric Surgery International
6. Pediatric Radiology
7. Intensive Care Medicine
8. Environmental Geology
9. Journal of Neurology
10. Aesthetic Plastic Surgery
11. European Food Research & Technology
12. European Journal of Pediatrics
13. Surgical Endoscopy
14. Clinical Rheumatology
15. Rheumatology International
16. The International Journal of Advanced Manufacturing Technology
17. European Journal of Nuclear Medicine & Molecular Imaging
18. Theoretical & Applied Genetics
19. Abdominal Imaging
20. Osteoporosis International
21. Applied Microbiology & Biotechnology
22. Diseases of the Colon & Rectum
23. Acta Neurochirurgica
24. Journal of Materials Science
25. Surgery Today
26. Neuroradiology
27. Journal of Medical Systems
28. Annals of Biomedical Engineering
29. Child's Nervous System
30. European Spine Journal
31. Diabetologia
32. Pediatric Cardiology
33. Analytical & Bioanalytical Chemistry
34. Skeletal Radiology
35. Hydrobiologia
36. Annals of Hematology
37. European Archives of Oto-Rhino-Laryngology
38. Digestive Diseases & Sciences
39. European Journal of Clinical Microbiology & Infectious Diseases

# Consortial use of Springer Link and Wiley Interscience journal packages

| Journal package | # of journal titles | # of ANKOS members | % of titles used by all members | | | | |
|---|---|---|---|---|---|---|---|
| | | | X | SD | Median | Min. | Max. |
| SpringerLink | 1,779 | 77 | 40 | 23 | 45 | 1 | 79 |
| Wiley Interscience | 470 | 48 | 74 | 15 | 77 | 15 | 95 |

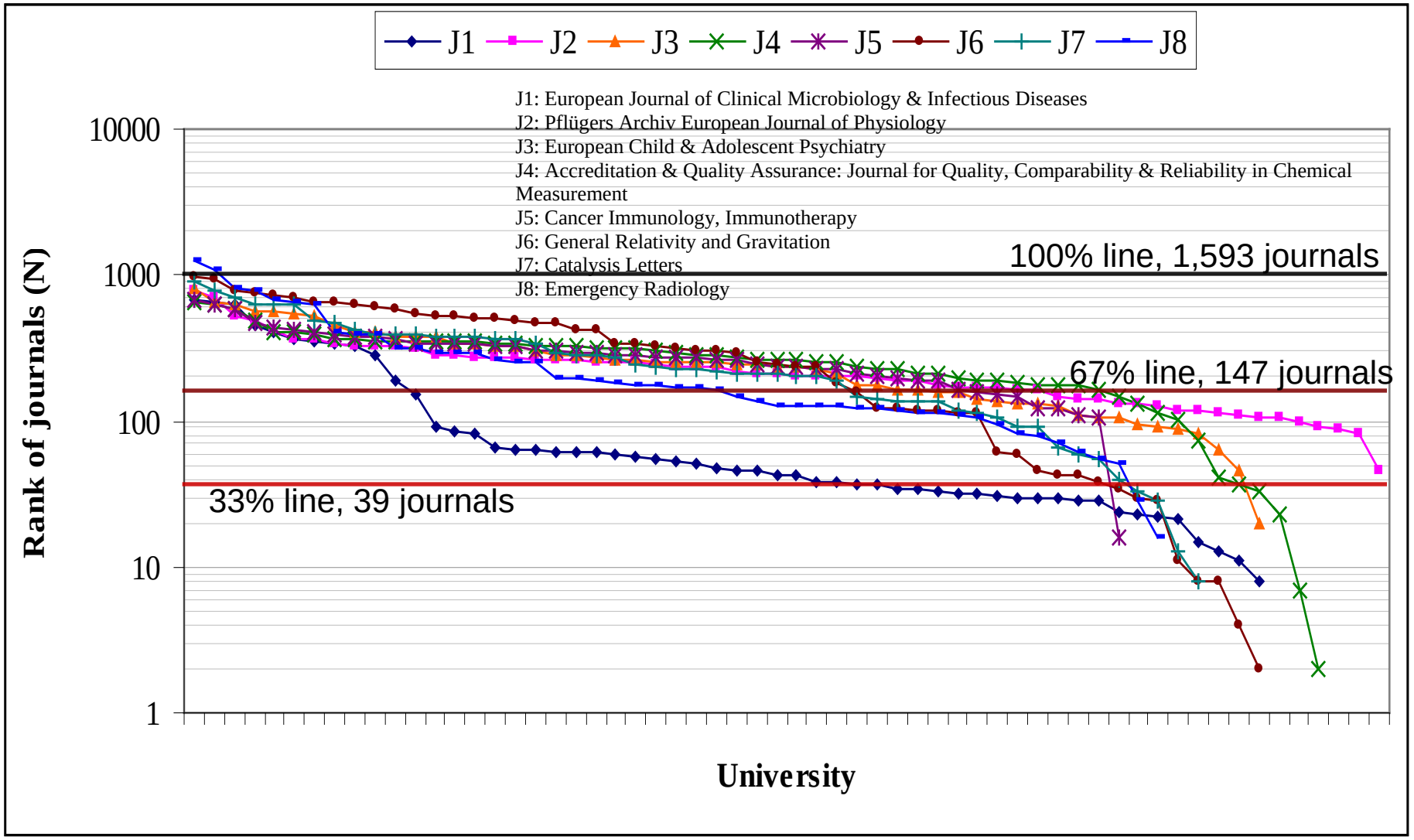
# 8 SL journals affected by removal of tail

| University no. | # of journal titles used | % of total journal titles used (N=1,779) | Journals J1* | J2* | J3* | J4* | J5* | J6* | J7* | J8* |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 605 | 34 | 23 | 251 | 382 | - | - | 314 | 209 | 187 |
| 2 | 873 | 49 | 58 | 104 | 260 | 363 | 154 | - | - | 254 |
| 3 | 822 | 46 | 186 | 236 | 564 | 637 | - | 469 | 390 | 394 |
| 4 | 951 | 53 | 32 | 130 | 175 | 228 | 148 | 307 | 292 | 112 |
| 5 | 925 | 52 | 328 | 168 | 157 | 320 | 593 | 4 | 65 | - |
| 6 | 1274 | 72 | 21 | 119 | 127 | 253 | 205 | 182 | 393 | 289 |
| 7 | 1076 | 60 | 85 | 280 | 255 | 326 | 268 | 588 | 190 | 109 |
| 8 | 160 | 9 | - | - | - | - | - | - | - | - |
| 9 | 462 | 26 | - | 418 | 140 | 174 | - | 43 | - | - |
| 10 | 445 | 25 | - | 271 | 327 | 209 | 303 | 237 | 117 | - |
| 11 | 829 | 47 | 43 | 175 | 165 | 353 | 107 | 119 | - | 70 |
| 12 | 1027 | 58 | 457 | 194 | 647 | - | 165 | 34 | 13 | - |
| 13 | 1261 | 71 | 682 | 119 | 94 | 399 | 373 | 38 | 8 | 631 |
| 14 | 606 | 34 | 13 | 99 | 237 | 325 | 334 | 498 | 383 | 298 |
| 15 | 832 | 47 | 51 | 201 | 270 | 287 | 234 | - | 202 | 162 |
| 16 | 701 | 39 | 351 | 249 | - | 145 | - | 2 | 137 | - |
| 17 | 131 | 7 | - | 113 | - | - | - | - | - | 78 |
| 18 | 1081 | 61 | 81 | 111 | 248 | 176 | 16 | 704 | 377 | 316 |
| 19 | 831 | 47 | 47 | 220 | 551 | 265 | 380 | 62 | 115 | 61 |
| 20 | 680 | 38 | - | 361 | 413 | 492 | - | 29 | 394 | - |
| 21 | 66 | 4 | - | - | - | - | - | 45 | - | - |
| 22 | 1296 | 73 | 30 | 200 | 46 | 73 | 124 | 962 | 707 | 194 |
| 23 | 301 | 17 | - | 273 | - | - | - | 43 | - | - |
| 24 | 1376 | 77 | 55 | 210 | 249 | 190 | 192 | 121 | 215 | 315 |
| 25 | 1038 | 58 | 38 | 213 | 228 | 262 | 416 | 765 | 639 | 196 |
| 26 | 906 | 51 | 34 | 83 | 372 | 362 | 367 | 462 | 90 | 124 |
| 27 | 548 | 31 | 406 | 248 | 405 | 346 | 280 | - | - | 127 |
| 28 | 919 | 52 | 31 | 105 | 374 | 662 | 190 | 247 | 776 | 118 |
| 29 | 286 | 16 | - | 259 | 134 | 115 | - | - | - | - |
| 30 | 1347 | 76 | 28 | 172 | 173 | 271 | 245 | 628 | 145 | 149 |
| 31 | 849 | 48 | 62 | 148 | 130 | 342 | 284 | 716 | - | 175 |
| 32 | 796 | 45 | 56 | 201 | 246 | 290 | 438 | - | 618 | 388 |
| 33 | 826 | 46 | 361 | 779 | - | 130 | 324 | 327 | 33 | 675 |
| 34 | 502 | 28 | 34 | 142 | 90 | 311 | - | - | - | 96 |
| 35 | 1286 | 72 | 32 | 90 | 109 | 165 | 110 | 646 | 228 | 104 |
| 36 | 509 | 29 | 66 | - | 249 | - | 302 | - | - | 51 |
| 37 | 133 | 7 | - | - | - | - | - | 8 | - | - |
| 38 | 896 | 50 | 8 | 171 | 266 | 239 | 339 | 643 | 240 | 137 |
| 39 | 632 | 36 | - | 253 | 161 | 176 | - | 501 | 470 | - |
| 40 | 179 | 10 | - | - | - | - | - | - | - | - |
| 41 | 1204 | 68 | 284 | 327 | 809 | 102 | 622 | 114 | 140 | 1089 |
| 42 | 29 | 2 | - | - | 20 | - | - | - | - | - |
| 43 | 1332 | 75 | 45 | 163 | 104 | 286 | 158 | 336 | 287 | 124 |
| 44 | 54 | 3 | - | - | - | - | - | - | - | - |
| 45 | 773 | 43 | 62 | 325 | - | 41 | 404 | 124 | 39 | - |
| 46 | 55 | 3 | - | - | - | - | - | - | - | - |
| 47 | 117 | 7 | 24 | - | - | - | - | - | - | - |
| 48 | 95 | 5 | - | - | - | - | - | - | - | 29 |
| 49 | 1039 | 58 | 37 | 262 | 526 | 588 | 120 | 493 | 900 | 129 |
| 50 | 509 | 29 | 63 | 332 | - | 347 | - | 232 | 224 | - |
| 51 | 1051 | 59 | 30 | 314 | 82 | 210 | 229 | 778 | 55 | 167 |
| 52 | 1021 | 57 | - | 362 | 133 | 23 | 392 | 156 | 270 | 654 |
| 53 | 21 | 1 | - | - | - | - | - | - | - | - |
| 54 | 342 | 19 | 11 | 98 | 63 | 7 | 232 | - | - | 167 |
| 55 | 871 | 49 | 30 | 45 | 333 | 260 | 263 | 116 | 282 | 183 |
| 56 | 43 | 2 | - | - | - | - | - | 11 | - | - |
| 57 | 531 | 30 | 91 | 492 | - | 180 | - | - | 107 | - |

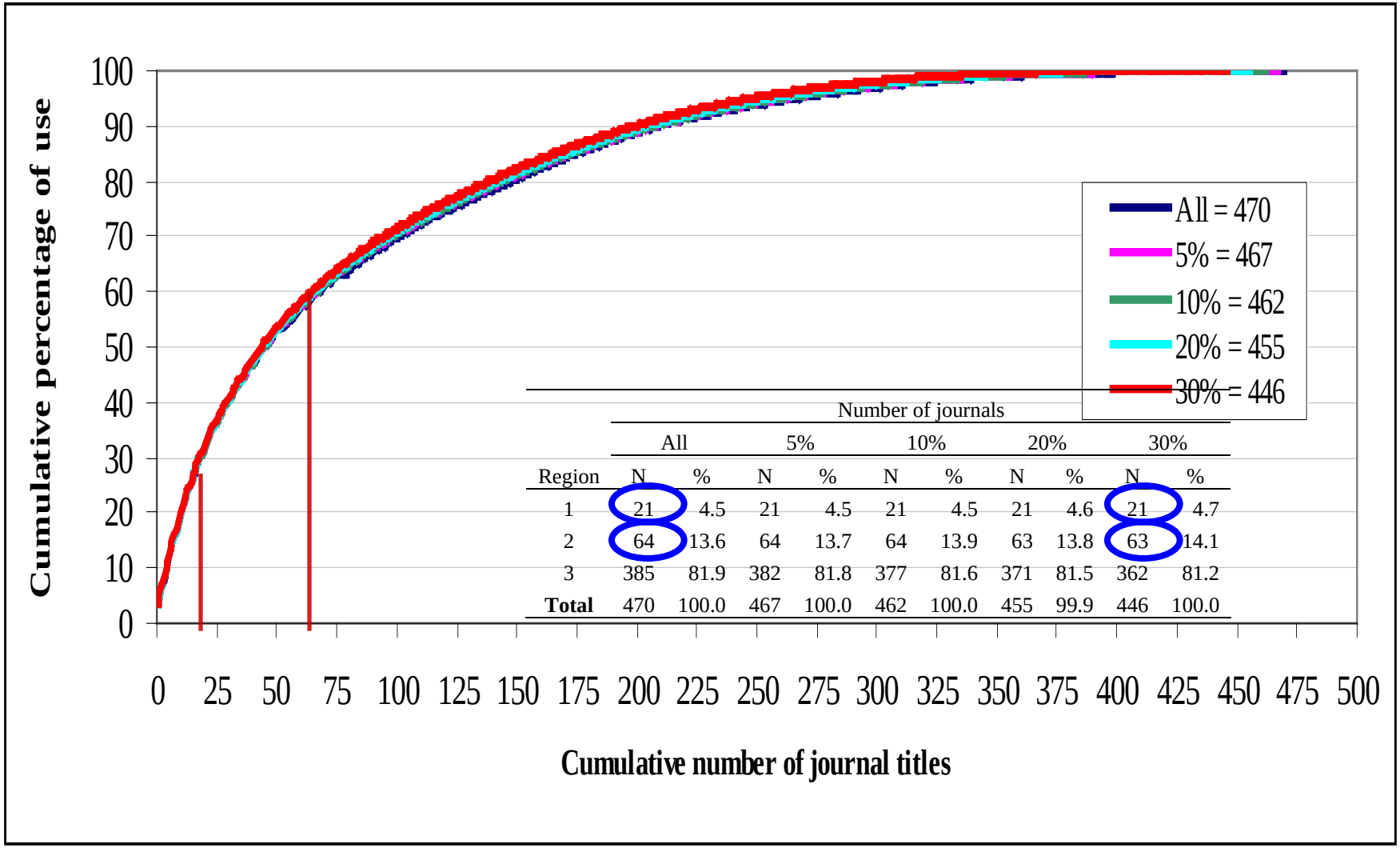
J1: European Journal of Clinical Microbiology & Infectious Diseases
J2: Pflügers Archiv European Journal of Physiology
J3: European Child & Adolescent Psychiatry
J4: Accreditation & Quality Assurance: Journal for Quality, Comparability & Reliability in Chemical Measurement
J5: Cancer Immunology, Immunotherapy
J6: General Relativity and Gravitation
J7: Catalysis Letters
J8: Emergency Radiology

8 Springer Link journals dropped from the list were heavily used (red cells) by only a few libraries (ie, in the first region). They were rarely used by the great majority of libraries (pink cells).

# Ranks of 8 SL journals in each university when 30% of journal titles removed from the consortial journal list



# Removing 30% from the tail of Wiley Interscience journal titles makes almost no effect on heavily or intermediately used titles




Number of journals

| | All | | 5% | | 10% | | 20% | | 30% | |
|---|---|---|---|---|---|---|---|---|---|---|
| Region | N | % | N | % | N | % | N | % | N | % |
| 1 | 21 | 4.5 | 21 | 4.5 | 21 | 4.5 | 21 | 4.6 | 21 | 4.7 |
| 2 | 64 | 13.6 | 64 | 13.7 | 64 | 13.9 | 63 | 13.8 | 63 | 14.1 |
| 3 | 385 | 81.9 | 382 | 81.8 | 377 | 81.6 | 371 | 81.5 | 362 | 81.2 |
| **Total** | 470 | 100.0 | 467 | 100.0 | 462 | 100.0 | 455 | 99.9 | 446 | 100.0 |

# Top 21 Wiley Interscience core journals

1. Journal of Applied Polymer Science
2. Cancer
3. American Journal of Medical Genetics
4. Journal of Polymer Science
5. Hepatology
6. Arthritis & Rheumatism
7. Journal of the Science of Food & Agriculture
8. Journal of Research in Science Teaching
9. Ultrasound in Obstetrics & Gynecology
10. Muscle & Nerve
11. Science Education
12. Journal of Biomedical Materials Research
13. Earthquake Engineering & Structural Dynamics
14. Prenatal Diagnosis
15. Angewandte Chemie - International Edition
16. Biotechnology & Bioengineering
17. Pediatric Blood & Cancer
18. British Journal of Surgery
19. Strategic Management Journal
20. International Journal of Energy Research
21. Microwave & Optical Technology Letters

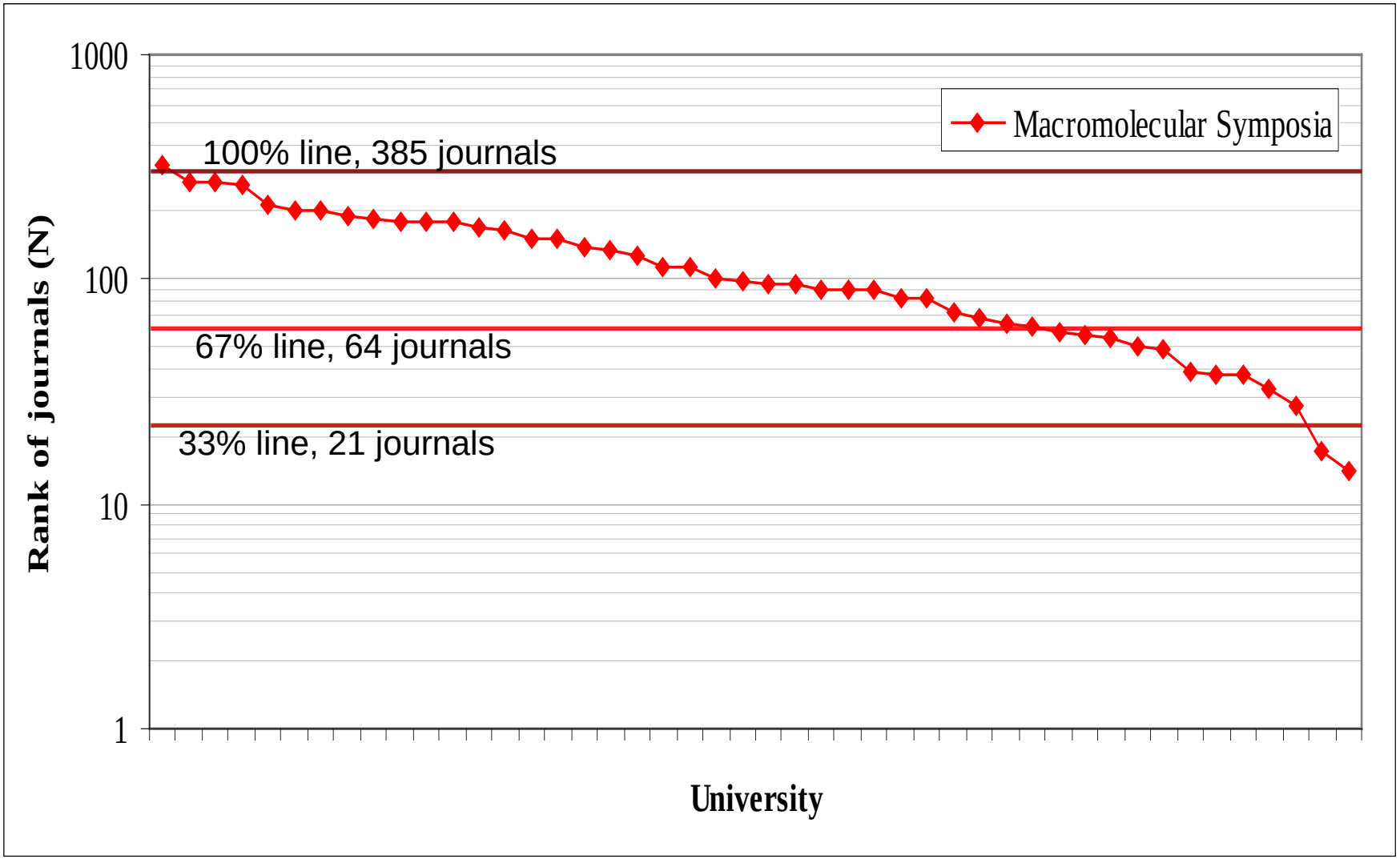
# Macromolecular Symposia

| University no. | # of journal titles used | % of total journal titles used (N=470) | Journal Macromolecular Symposia |
|---|---|---|---|
| 1 | 275 | 59 | 264 |
| 2 | 385 | 82 | 63 |
| 3 | 324 | 69 | 114 |
| 4 | 398 | 85 | 178 |
| 5 | 346 | 74 | 324 |
| 6 | 383 | 81 | 274 |
| 7 | 306 | 65 | 203 |
| 8 | 374 | 80 | 96 |
| 9 | 368 | 78 | 61 |
| 10 | 324 | 69 | 90 |
| 11 | 346 | 74 | 83 |
| 12 | 221 | 47 | 95 |
| 13 | 337 | 72 | 55 |
| 14 | 412 | 88 | 153 |
| 15 | 433 | 92 | 115 |
| 16 | 406 | 86 | 185 |
| 17 | 308 | 66 | 191 |
| 18 | 374 | 80 | 99 |
| 19 | 69 | 15 | - |
| 20 | 438 | 93 | 134 |
| 21 | 332 | 71 | 129 |
| 22 | 390 | 83 | 181 |
| 23 | 397 | 84 | 38 |
| 24 | 277 | 59 | - |
| 25 | 384 | 82 | 89 |
| 26 | 373 | 79 | 169 |
| 27 | 429 | 91 | 17 |
| 28 | 345 | 73 | 68 |
| 29 | 349 | 74 | 33 |
| 30 | 387 | 82 | 215 |
| 31 | 380 | 81 | 49 |
| 32 | 376 | 80 | 38 |
| 33 | 377 | 80 | 269 |
| 34 | 243 | 52 | 150 |
| 35 | 138 | 29 | 58 |
| 36 | 432 | 92 | 51 |
| 37 | 292 | 62 | 166 |
| 38 | 359 | 76 | 179 |
| 39 | 446 | 95 | 14 |
| 40 | 330 | 70 | 90 |
| 41 | 341 | 73 | 82 |
| 42 | 390 | 83 | 202 |
| 43 | 359 | 76 | 102 |
| 44 | 442 | 94 | 39 |
| 45 | 341 | 73 | 137 |
| 46 | 337 | 72 | 27 |
| 47 | 378 | 80 | 71 |
| 48 | 244 | 52 | 57 |

Macromolecular Symposia was heavily used (red cells) by only two libraries (ie, in the first region).

It was rarely used by the great majority of libraries (pink cells).

# Ranks of *Macromolecular Symposia* in each university when 30% of journal titles removed from the consortial journal list



# Conclusion

- Removing 30% of journal titles from the tail makes almost no effect on consortial core journal list of ANKOS
- Individual ANKOS members can function perfectly well without those titles
- Download requests to a small number of disenfranchised journal titles can be satisfied by other means (i.e., pay-per-view)
- Consortial licensing models should take this into account

# The Tail Wagging the Dog? The Impact of Removing Infrequently Used Journal Titles on the Stability of the Consortial Core Journals List

**Yaşar Tonta & Yurdagül Ünal**
Department of Information Management
Hacettepe University
Ankara, Turkey
{tonta, yurdagul}@hacettepe.edu.tr